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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/696,109	10/25/2000	Juergen Bauer	510553.92128	4150

7590 03/12/2004

Christopher M. Turoski
FOLEY & LARDNER
FIRSTAR CENTER
777 East Wisconsin Avenue
Milwaukee, WI 53202-5367

EXAMINER

DOVE, TRACY MAE

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 03/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/696,109

Applicant(s)

BAUER ET AL.

Examiner

Tracy Dove

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 91-148 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 91-148 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

This Office Action is in response to the communication filed on 1/15/04. Applicant's arguments have been considered, but are not persuasive. Claims 91-148 are pending. Claims 1-90 have been canceled.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/15/04 has been entered.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 91-148 are rejected under the judicially created doctrine of double patenting over claims 1-33 of U. S. Patent No. 6,117,594 since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows: both the application and the patent claim a grid supporting structure having an active material pasted thereto. The grid comprises a lead-based alloy consisting essentially of lead, tin, calcium and silver.

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application which matured into a patent. See also MPEP § 804.

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Claims 91-148 are provisionally rejected under the judicially created doctrine of double patenting over claims 30-71 of copending Application No. 09/627,522. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows: both the instant application and the copending application claim a grid

supporting structure having an active material pasted thereto. The grid comprises a lead-based alloy consisting essentially of lead, tin, calcium and silver.

Furthermore, there is no apparent reason why applicant would be prevented from presenting claims corresponding to those of the instant application in the other copending application. See also MPEP § 804.

Claims Analysis

Claims 91, 111 and 129 recite "A lead-acid cell for an SLI battery configured for use in vehicle applications", but, since the claims do not set forth any steps involved in the method/process the limitation "configured for use in vehicle applications" will not be given patentable weight. Neither the specification nor the claims disclose how the lead-acid battery is *configured for use* in vehicle applications.

Claim Objections

Claims 110, 127, 128 and 148 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Regarding claims 110, 128 and 148, the term "SLI" is an abbreviation for "starting, lighting, ignition" (see page 3, line 2 of the specification). Regarding claim 127, claim 111 already requires the positive plate and negative plate be separated by a separator.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it

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pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 96, 100, 103, 116, 119, 120, 134, 138 and 141 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification does not support a lead alloy having a silver content of 0.008% by weight.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 91-148 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "thin" in claims 91, 111 and 129 is a relative term which renders the claims indefinite. The term "thin" is not defined by the claims, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The specification does not disclose any thickness values for the grid supporting structure. Thus, it is unclear what the term "thin" encompasses.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 91-148 are rejected under 35 U.S.C. 102(e)/103(a) as being anticipated by, and alternatively unpatentable over, Larsen et al., US 5,948,566.

Larsen teaches a sealed lead-acid battery (col. 11, lines 35-39) having a positive plate, a negative plate and a separator between the plates (col. 8, lines 20-36). An active material paste is applied to a grid supporting structure to form the positive plate (col. 7, lines 24-43). The positive grid alloy comprises a lead-based calcium-tin-silver alloy in which, based upon the total weight of the alloy, calcium is present in a range of from about 0.01% to 0.06%, tin is present in a range of from about 0.3% to 1.0% and silver is present in a range of about 0.01% to 0.06%. Note the ratio of tin to calcium may be greater than 20:1. Optionally, aluminum can be included in an amount from about 0.003% to 0.010%. See col. 11, lines 7-14.

Thus, the claims are anticipated.

The claims are alternatively unpatentable. The claim limitation "formed by book mold gravity casting" is a product-by-process limitation. The courts have ruled that product-by-process limitation, in the absence of unexpected results, are obvious. In re Fessman. Thus,

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whether the grids are made by gravity casting or direct casting, the lead alloy grids are the same. Furthermore, Larsen at least suggests the grids may be made by gravity casting. Larsen teaches it is known to form grids by gravity casting techniques (col. 2, lines 18-19) and that such grids have been made by utilizing gravity casting and a number of molds (col. 2, lines 38-39).

Regarding the claim limitation "A lead-acid cell for an SLI battery", Larsen teaches the grids and plates disclosed therein are useful in any desired lead-acid cell/battery application (col. 3, lines 44-56).

Alternatively, the invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made because a prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. *Titanium Metals Corp. of America v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985) (Court held as proper a rejection of a claim directed to an alloy of "having 0.8% nickel, 0.3% molybdenum, up to 0.1% iron, balance titanium" as obvious over a reference disclosing alloys of 0.75% nickel, 0.25% molybdenum, balance titanium and 0.94% nickel, 0.31% molybdenum, balance titanium.). See MPEP 2144.05.

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Claims 91-148 are rejected under 35 U.S.C. 103(a) as being unpatentable over Larsen, US 6,423,451.

Larsen teaches a sealed lead-acid cell having a container, a positive plate, a negative plate and a separator between the positive and negative plate (col. 8, lines 30-42). The positive plate comprises a grid and a positive active material pasted onto the grid (col. 8, lines 8-12). Larsen

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teaches that the grid supporting structure comprises a lead-based alloy consisting essentially of lead, from about 0.02% to about 0.05% calcium, from about 1.5% to about 3.0% tin and from about 0.01% to about 0.05% of silver (see abstract). Note the tin to calcium ratio is greater than 20:1. Optionally, the alloys can include from about 0.003% to 0.03% by weight of aluminum (col. 5, lines 8-9). Larsen teaches that the grids may be formed by conventional casting techniques such as gravity casting ("book molds" or the like) and continuous processes using expanded metal techniques (col. 2, lines 25-32 and col. 7, lines 40-47). The grids of Larsen may be used in any lead-acid cell or battery including, for example, automotive (flooded starting, lighting and ignition), bipolar and the like (col. 12, lines 12-17). Table 4 teaches a specific lead based alloy grid having 2.0% tin, 0.006% silver, 0.040% calcium and the balance lead. Note the alloy (Alloy E) has a ratio of tin to calcium of 50:1 (2/0.04).

Larsen does not explicitly disclose a grid supporting structure having the alloy composition of the instant claims.

However, the invention as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made because a prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. *Titanium Metals Corp. of America v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985) (Court held as proper a rejection of a claim directed to an alloy of "having 0.8% nickel, 0.3% molybdenum, up to 0.1% iron, balance titanium" as obvious over a reference disclosing alloys of 0.75% nickel, 0.25% molybdenum, balance titanium and 0.94% nickel, 0.31% molybdenum, balance titanium.). See MPEP 2144.05.

Response to Arguments

Applicant's arguments filed 1/15/04 have been fully considered but they are not persuasive.

Applicant has requested the double patenting rejection be held in abeyance until allowable claims are indicated by the Examiner. No further arguments are provided regarding the double patenting rejection.

Larsen '566

Applicant argues the claims as amended are directed toward a SLI battery and require the grid to be "thin". However, the term "thin" has been rejected under 35 U.S.C. 112, 2nd, as indefinite. Applicant argues Larsen does not disclose any specific examples of an alloy having a composition as recited in the claimed invention with "sufficient specificity" to constitute an anticipation rejection. Applicant further argues Larsen discloses no understanding of the effects realized in the claimed ranges of the alloy composition. However, as shown by Table 3 of the instant specification, no cracking of the grids is an effect realized in the claimed ranges of the alloy composition. Larsen does understand the effects realized in the claimed invention because Larsen teaches the lead-tin-calcium-silver alloy grids have a crack-free surface (abstract).

The Examiner points out that MPEP 2131.03 teaches when the prior art discloses a range which touches, overlaps or is within the claimed range, but no specific examples falling within the claimed range are disclosed, a case by case determination must be made as to anticipation. In order to anticipate the claims, the claimed subject matter must be disclosed in the reference with "sufficient specificity to constitute an anticipation under the statute." What constitutes a "sufficient specificity" is fact dependent. If the claims are directed to a narrow range, the

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reference teaches a broad range, and there is evidence of unexpected results within the claimed narrow range, depending on the other facts of the case, it may be reasonable to conclude that the narrow range is not disclosed with "sufficient specificity" to constitute an anticipation of the claims. The unexpected results may also render the claims unobvious. The question of "sufficient specificity" is similar to that of "clearly envisaging" a species from a generic teaching. See MPEP § 2131.02. *A 35 U.S.C. 102 /103 combination rejection is permitted if it is unclear if the reference teaches the range with "sufficient specificity."* The examiner must, in this case, provide reasons for anticipation as well as a motivational statement regarding obviousness. Ex parte Lee 31 USPQ2d 1105 (Bd. Pat. App. & Inter. 1993) (expanded Board).

Applicant does not provide evidence of unexpected results. The composition ranges for the lead based alloy of the prior art are not considered "broad" when used to anticipate the composition ranges for the lead based alloy of the claimed invention. MPEP 2131.03 does not require the prior art reference to teach a specific example falling within the claimed range when the prior art discloses a range which touches, overlaps or is within the claimed range in order to constitute an anticipation rejection.

Larsen '451

Applicant argues Larsen does not identify any effect of tin in a range below 1.5 percent. However, the instant specification does not identify any effect which is attributed to the amount of tin only. The specification teaches effects of the lead-based alloy as a whole. There is no evidence of any effect attributed directly to the amount of tin contained in the lead-based alloy. Furthermore, Larsen realizes that suitable alloys must be capable of being cast into grids by the

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desired technique, i.e., the cast grids must be low in defects as it known (e.g., relative freedom of voids, tears, micro-cracks and the like). Such casting techniques include book mold gravity casting (2:25-31). The grids of Larsen may be used for SLI lead-acid batteries (12:12-17).

Applicant does not provide evidence of unexpected results.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tracy Dove whose telephone number is 571-272-1285. The examiner can normally be reached on Monday-Thursday (9:00-7:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pat Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tracy Dove
Patent Examiner
Technology Center 1700
Art Unit 1745

March 8, 2004